PRELIMINARY LAND USE CLASSIFICATION OF BURABAY STATE NATIONAL NATURE PARK

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Introduction. The main objective of the given project is to study land use distribution within five watersheds located in Burabay National Park: Shortan, Ulken Shabakty, Kishi Shabakty, Burabay and Tekekol. The overall strategy consists of the following tasks: creation of unified map regarding land use distribution; identification of current land cover trends; estimation of land use impact on water resources.

Materials and methods. ESRI ArcMap 10.2.2 was used as a main tool for land use classification. Unsupervised Classification tools of Spatial Analyst extension were utilized for this task. LandSat 5 (2011) images were taken as a subject of classification. Seven classes of land cover were identified, which are most typical to this region: water resources, forest, grassland, urban, agriculture, steppe, roads/bare lands. [1,2] Land use classification was made for each watershed separately with analyzing related statistics.

Results and discussion. According to the data obtained (figure 3), it is clear that the main area of the research can be characterized as forest. Nevertheless, the north and the north-west area are located on the steppe zones. The most urbanized is the Shortandy watershed with about 11% of the settlement, whereas in the Tekekol watershed does not contain any built-up area. The maximum concentration of a forest located in the Burabay watershed (nearly 44%) while Tekekol watershed has the highest proportion of steppe (51%), without any forests in its territory. Kishi Shabakty watershed has about 10% of agricultural lands.

Conclusions. This classification has been done as part of the research related to estimation of water balance of Burabay Nature Park. By utilizing satellite images and GIS techniques a detailed analysis of the territory was performed in order to evaluate land use changes and to investigate the impact of land use changes on regional hydrology.

According to obtained results it is clear that the land use form of Burabay National Park has heterogeneous nature due to its multifunctional role. It plays vital role as main tourist destination. However, this region has unique natural resources that has to be constantly monitored. In the following two years of the project it is planned to asses land use changes using LandSat images for 1975, 1977, 1988 and 1991 years. This is necessary to follow the dynamics of the land use patterns. This will allow us to understand the pattern of historical land use changes" impact on regional water resources.

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